UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,107	09/28/2001	John F. Thompson	PC10217A	8105

7590 04/28/2004

Gregg C. Benson
Pfizer Inc.
Patent Department, MS 4159
Eastern Point Road
Groton, CT 06340

EXAMINER	
LANDSMAN, ROBERT S	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/967,107	THOMPSON, JOHN F.	
	Examiner	Art Unit	
	Robert Landsman	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) 42 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/24/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Formal Matters

A. Claims 1-42 are pending and are the subject of this Office Action and were subject to restriction in the Office Action dated 10/16/03. In the response dated 2/12/04, Applicants elected Group 1, claims 1-41 with traverse. In view of Applicants' arguments that there is no serious search burden, the Groups will be combined. Therefore, claims 1-42 are the subject of this Office Action.

2. Claim Rejections - 35 USC § 112, first paragraph – scope of enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

A. Claims 1-42 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of identifying test agents, ligands and functional effects for a PPARα/SRC-1 or PPARβ/SRC-1 steroid receptor complex, does not reasonably provide enablement for methods of determining test agents, ligands and functional effects for all steroid receptors, nor how to test for compounds and effects using "combinations" of receptors or coactivators. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

In In re Wands, 8USPQ2d, 1400 (CAFC 1988) page 1404, the factors to be considered in determining whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

First, the breadth of the claims is excessive with regard to claiming methods of determining test agents, ligands and functional effects for all steroid receptors. Applicants only provide guidance and working examples of PPARα/SRC-1 or PPARβ/SRC-1 steroid receptor complexes. Applicants have not provided and guidance or working examples of the use of any other assay systems other than PPAR/SRC-1, including for "active fragments thereof," or what "activity" is being measured (similarly, the term "effect" in, for example, claims 17 and 18). These "active fragments" would have one or more amino acid substitutions, deletions, insertions and/or additions to the claimed proteins and Applicants have not

identified which residues are critical to retain receptor, or regulatory protein function (i.e. which residues can be altered and still retain function). Therefore, in the absence of this guidance, it is not predictable to the artisan how to make a functional nuclear receptor protein, or coregulator other than the full-length proteins disclosed in the specification. Furthermore, Applicants have not taught how to use these methods with "combinations" of receptors and coactivators.

Furthermore, regarding the immense number of nuclear receptors, coactivators, and especially ligands (see, for example, claim 2) the instant fact pattern is similar to that in *In re Hyatt*, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983), wherein a single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification at most disclosed only those means known to the inventors. When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. See also *Fiers v. Sugano*, 984 F.2d 164, 25 USPQ2d 1601 (Fed. Cir. 1993), and MPEP § 2164.08(a). Applicants are attempting to claim any test compound for any steroid receptor while the specification is only enabled for methods using PPARα/SRC-1 or PPARβ/SRC-1.

Therefore, in summary, the breadth of the claims is excessive with regard to Applicants claiming all methods of determining test agents, ligands and functional effects for all steroid receptors. Applicants only provide guidance and working examples of PPARα/SRC-1 or PPARβ/SRC-1 steroid receptor complexes. These factors, along with the lack of predictability to one of ordinary skill in the art as to how to make functional "active fragments" of proteins other than the full-length, leads the Examiner to hold that undue experimentation is necessary to practice the invention as claimed.

3. Claim Rejections - 35 USC § 112, first paragraph – lack of enablement

A. Claim 42 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants have provided no guidance or working examples of any pharmaceutical compositions comprising any of the compounds identified in claims 1. Applicants have not taught how to use any potential compounds to treat any diseases, nor have Applicants taught what diseases could be treated with these yet unidentified compounds. Furthermore, it is not predictable to one of ordinary skill in the art how to use the claimed pharmaceutical composition.

Therefore, the Examiner has determined that undue experimentation is required to practice the claimed invention.

4. Claim Rejections - 35 USC § 112, first paragraph – written description

A. Claims 1-42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

These are genus claims. Applicants are claiming methods of determining functional effects of any "active fragment" of any nuclear receptor protein, coactivator, or wherein the test agent as, essentially, any of the universe of compounds in, for example, claim 2. Active fragments of full-length receptors and coactivators would have one or more amino acid substitutions, deletions, insertions and/or additions to the proteins of the claims.

The specification and claims do not indicate what distinguishing attributes are shared by the members of the genus. Thus the scope of the claims includes numerous structural variants, and the genus is highly variant because a significant number of structural differences between genus members is permitted. The specification and claims do not provide any guidance as to what changes should be made. Structural features that could distinguish compounds in the genus from others in the nucleic acid, protein, or other chemical/structural class are missing from the disclosure. No common structural attributes identify the members of the genus. The general knowledge and level of skill in the art do not supplement the omitted description because specific, not general, guidance is what is needed. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus is highly variant, "active fragments" and the test agents in, for example, claim 2 are insufficient to describe the genus. One of skill in the art would reasonable conclude that the disclosure fails to provide a representative number of species to describe the genus. Thus, Applicant was not in possession of the claimed genus at the time the invention was made.

B. Claim 42 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

These are genus claims. Applicants have not provided any written description of any pharmaceutical compositions comprising any of the compounds identified in claims 1. Furthermore, Applicants have not provided any written description of any diseases which could be treated with these yet unidentified compounds.

5. Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A. Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: how to determine a "functional effect." Applicants have not taught what these effects are, or when the desired goal of the claims, such as determining a functional effect, has been achieved.

B. Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The metes and bounds of "first" and "second activity" are not known.

C. Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The metes and bounds of metes and bounds of "simply quantified" are not known.

D. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim is confusing, since, if the compound is neither an "agonist" nor "antagonist" what is the type of ligand.

6. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

A. Claims 1-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Northrop (US Patent No. 6,410,245). The claims recite methods of determining the functional effects of test agents on nuclear receptors, or for identifying nuclear receptor ligands for nuclear receptors. Northrop teach methods for identifying ligands for nuclear receptors using various systems. Northrop teach the use of GST-fused receptors, coactivators, fixed surfaces and various detection techniques (at least Figures 1 and 6). Assays, including the discussion of ligands-binding domains, including LXXLL regions, are also discussed (column 7, line 53 to column 8, line 40; column 9, line 49). Column 21, line 34 to column 23, line 45) discuss the various nuclear receptors and reporter proteins which can be used. It is not understood how the claimed invention differs from techniques widely used in the art.

7. Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

A. Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Northrop (US Patent No. 6,410,245) in view of Singh et al. The claims and teachings of Northrop are seen in the above rejection under 35 USC 102. Northrop do not specifically teach the use of a column. However, Singh do teach purifying nuclear receptor ligands on a column. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the present invention to have used a purification-facilitation device such as an affinity column in order immobilize the protein of interest to be able to isolate any proteins which interact with the immobilized protein. One would have been motivated to use such a column in the

invention of Northrop since affinity columns were well-known and their use highly successful in the art at the time of the present invention.

8. Conclusion

A. No claim is allowable.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Landsman whose telephone number is (703) 306-3407. The examiner can normally be reached on Monday - Friday from 8:00 AM to 5:00 PM (Eastern time) and alternate Fridays from 8:00 AM to 5:00 PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623.

Official papers filed by fax should be directed to (703) 308-4242. Fax draft or informal communications with the examiner should be directed to (703) 308-0294.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Robert Landsman, Ph.D.
Patent Examiner
Group 1600
April 27, 2004